

**Remarks/Arguments:**

Claims 1-3, 6-12 and 14-34 and 36 are pending.

Claims 1-3, 6-12 and 14-35 are indicated in the Office Action to be rejected.

Applicants submit that claim 35 has been canceled in the last Amendment filed December 16, 2008. Accordingly, Applicants submit the indication in the Office Action that claim 35 is rejected is incorrect.

Applicants further submit that claim 36 has not been rejected in the Office Action, and as such is presumed to be allowable subject matter. The Examiner is asked to explicitly state that claim 36 is allowable subject matter in the next Office Action. It is noted for the Examiner that if claim 36 is rejected in the next Office Action, the next Office Action must be made non-final.

By this Amendment, claims 18, 31 and 32 are amended only to correct typographical errors. No new matter is presented by the claim amendments.

**Examiner Interview**

An Examiner Interview was conducted on May 26, 2009 between Applicants' Representative Eric Berkowitz and Examiner Aghdam. The Examiner is thanked for her efforts. During the Examiner interview, Applicants' Representative asked for clarification regarding the rejection of claim 1 with regard to the prior art reference to Son (U.S. Patent Publication No. 2003/0189892). Applicants' Representative argued that Son does not teach "a first band order," "a second band order" or "a plurality of bands" as required by claim 1. The Examiner acknowledged that she was unsure of the teachings in Son related to the replica generator and, in particular, how cyclical circulation of subcarriers is performed. The Examiner agreed to reconsider the Son reference in light of Applicants' arguments and that she would consult with another Examiner expert in OFDM systems.

**Information Disclosure Statement**

An Information Disclosure Statement (IDS) including one reference is submitted herewith.

Consideration and entry is respectfully requested.

**Rejection of Claims 1-3, 6-12 and 14-35 Under 35 U.S.C. §103**

In the Office Action, at page 2, claims 1-3, 6-12 and 14-35 are rejected under 35 U.S.C. 102(e) as anticipated by Son et al. (US Patent Publication No. 2003/0189892, hereafter referred to as Son).

This ground of rejection is respectfully traversed.

**Claim 35**

Applicants submit that claim 35 was canceled in the last Amendment filed December 16, 2008. Accordingly, Applicants submit the indication in the Office Action that claim 35 is rejected is incorrect.

**Claim 1**

Claim 1 is directed to a communication method for use in a communication system utilizing a plurality of bands, and recites:

... mapping a bit stream in a data stream to the plurality of bands, respectively, in a first band order wherein the first band order indicates a mapping pattern for mapping the bit stream to the respective plurality of bands;

mapping the bit stream to the same plurality of bands, as the plurality of bands used to map the bit stream in the first band order, in a second band order wherein the second band order indicates a mapping pattern that is different from the mapping pattern of the first band order; and

transmitting the bit stream mapped to the plurality of bands respectively in the first band order and the bit stream mapped to the plurality of bands respectively in the second band order without changing the plurality of bands used to transmit the bit stream.

That is, the bit stream is mapped to a plurality of bands in a first band order which indicates a corresponding mapping pattern and the bit stream is also mapped to the same plurality of bands, but in a second band order according to a mapping pattern corresponding to the second

band order where the first and second mapping patterns are different. Further the bit stream is transmitted in the first and second band orders.

### Son Reference

The Examiner contends that Son discloses "a method ... for improving data transmission to a receiver utilizing multiple bands (Fig. 2, means 271; Fig. 8; Par. 35 and 41)." Applicants respectfully disagree with the Examiner regarding the cited portions of Son. More particularly, Son, which is directed to a transmission method for use with an OFDM mobile communication system, is silent regarding the use of a plurality of bands. Son discloses in paragraph [0041] that its OFDM mobile communication system performs cyclic circulation on subcarriers and that replicas must be transmitted over subcarriers having no correlation with one another. As shown in Fig. 3, the output signal of the cyclic circulator is provided to an Inverse Fast Fourier Transform (IFFT) block 225. As is well known, IFFT block converts a frequency-domain signal to a time domain signal. That is, Son discloses the use of an OFDM system which converts subcarrier signals in the frequency domain to **a single time domain signal**. Thus, Son uses a single frequency band and does not contemplate transmission of a "bit stream mapped to the plurality of bands respectively in the first band order and the bit stream mapped to the plurality of bands respectively in the second band order without changing the plurality of bands," as required by claim 1. This is because, Son uses a single frequency band for transmission of an RF signal over the air.

Furthermore, the Examiner relies on paragraphs [0035] and [0041] of Son to teach first and second band orders. The cited portions of Son discloses a replica generator 221 that **circulates replica data on subcarriers** in the same order as the original data, but delayed to create the appropriate cyclical circulation distance d. (See Son at paragraphs [0038]-[0041].) This is reinforced by Equations 1 and 2 of Son, which show symbol S(0) delayed by N-d symbols in the replica data but the order of the original data and replica data is the same. That is, Son at most teaches cyclical circulation (without changing the order) of subcarriers. If Applicants accepts arguendo the Examiner's position regarding the plurality of bands, the first and second band order are still not in different orders (i.e., different band orders). This is because, the mapping pattern of that the replicas data symbols to the subcarriers is the same as that of the mapping pattern of the original data symbols (i.e., they share the same mapping pattern). Thus, Son does not disclose or suggest "mapping ... to the plurality of bands, ... in a first band order wherein the first band order indicates a mapping pattern ... to the respective plurality of bands ... [and] mapping ... to the same plurality of bands ... in a second band order

wherein the second band order indicates a mapping pattern that is different from the mapping pattern of the first band order," (brackets added). That is, Son contemplates the uses of the same mapping pattern and the same order for subcarrier circulation but with a delay for replicas data symbols relative to the original data symbols.

Accordingly, claim 1 is submitted to be allowable over Son for at least the above-mentioned reasons.

**Claims 7, 10, 15, 18, 20, 23, and 25**

Claims 7, 10, 15, 18, 20, 23, and 25, while not identical to claim 1, include features similar to those found in claim 1. Accordingly, Applicants respectfully submit that claims 7, 10, 15, 18, 20, 23, and 25 are allowable over Son for at least the same reasons as set forth for claim 1.

**Claims 2-3, 6, 8-9, 11-12, 14, 16-17, 19, 21-22, 24 and 26-34**

Claims 2-3, 6, 8-9, 11-12, 14, 16-17, 19, 21-22, 24 and 26-34, which include all of the limitations of their respective independent claims, are submitted to be allowable over Son for at least the same reasons as their respective independent claims.

**Conclusion**

In view of the claim amendments and remarks set forth above, Applicants respectfully submit that the application is in condition for allowance. Notification to that effect is respectfully requested.

Respectfully submitted,

  
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